

Claims

1. A digital radio communication device comprising:
receiving means for receiving a radio wave;
5 position detecting means; and
control means for tuning the receiving means,

wherein the control means is provided such that once a reception
quality of the receiving means becomes deteriorated, the control
means judges a receiving means reception quality deterioration area
10 in accordance with an output of the position detecting means, learns
a tuning condition for further improving the reception quality,
and takes a learned tuning condition as a tuning condition for tuning
the receiving means when next passing through said area.

15 2. The digital radio communication device according to claim 1,
wherein the control means stores said tuning condition for tuning
said receiving means as well as history information in relation
to a reception quality of the receiving means,

wherein once a reception quality of the receiving means becomes
20 deteriorated, and if a mobile body is passing through said judged
area, the control means tunes said receiving means in accordance
with said tuning condition, and compares a reception quality obtained
by tuning the receiving means in accordance with said tuning condition,
with a reception quality obtained when last passing through said
25 area, in accordance with said history information, wherein once
a reception quality becomes lower than a reception quality obtained
during a last passing, the control means performs an operation to

calculate a new tuning condition for further improving a reception quality of said receiving means, performs a learning by updating said tuning condition with said new tuning condition, and takes a tuning condition after the learning as a tuning condition for
5 tuning said receiving means when next passing through said area.

3. The digital radio communication device according to claim 1 or 2, wherein the control means judges a reception quality of the receiving means in accordance with a bit error rate outputted from
10 said receiving means.

4. The digital radio communication device according to claim 1, wherein the position detecting means is a GPS receiver.

15 5. The digital radio communication device according to claim 1, wherein the control means has a table for outputting a tuning condition with respect to said receiving means upon receiving internal operation state information and reception quality information of the receiving means, and takes an output from said table as a new
20 tuning condition for further improving the reception quality of said receiving means.

6. The digital radio communication device according to claim 1, wherein the control means has storage means for storing a tuning
25 condition for tuning said receiving means, history information relating to the reception quality of the receiving means, and position information outputted from the position detecting means when the

reception quality of the receiving means has become deteriorated.

7. The digital radio communication device according to claim 1,
wherein the control means stores, in a server on a broadcasting
5 station side, a tuning condition for tuning said receiving means
and history information relating to a reception quality of the
receiving means, and further stores position information outputted
from the position detecting means when the reception quality of
the receiving means has become deteriorated,

10 wherein once a reception quality of the receiving means has
become deteriorated, the control means operates to download said
tuning condition, history information and position information
stored in the server on said broadcasting station side.

15 8. A method of tuning receiving means in a digital radio
communication device comprising the receiving means for receiving
a radio wave and position detecting means,

wherein once a reception quality of the receiving means becomes
deteriorated, a receiving means reception quality deterioration
20 area is determined in accordance with an output of the position
detecting means, while a tuning condition for further improving
the reception quality is learned, and a learned tuning condition
is taken as a tuning condition for tuning the receiving means when
next passing through said area.

25 9. A computer program for operating a computer in a digital radio
communication device which comprises receiving means for receiving

a radio wave, position detecting means, and control means including a computer for tuning the receiving means,

wherein the computer is caused to detect a reception quality of the reception means and once the computer detects that a reception
5 quality of the receiving means has become deteriorated, a receiving means reception quality deterioration area is determined in accordance with an output of the position detecting means, while a tuning condition for further improving the reception quality is learned, and a learned tuning condition is taken as a tuning condition
10 for tuning the receiving means when next passing through said area.

10. A storage medium storing a computer program for operating a computer in a digital radio communication device which comprises receiving means for receiving a radio wave, position detecting means,
15 and control means including a computer for tuning the receiving means,

wherein the computer is caused to detect a reception quality of the reception means and once the computer detects that a reception quality of the receiving means has become deteriorated, a receiving
20 means reception quality deterioration area is determined in accordance with an output of the position detecting means, while a tuning condition for further improving the reception quality is learned, and a learned tuning condition is taken as a tuning condition for tuning the receiving means when next passing through said area.